

**CLAIMS**

1. A method of reading a plurality of transponders forming part of an electronic identification system also comprising a reader, the method comprising the steps of:

- causing the reader to lock onto a first part of a digital sequence being transmitted by one of said transponders;
- causing the reader to broadcast a mute signal to mute all of said transponders not yet transmitting;
- causing the reader to transmit a separate first command to cause said one transponder to transmit a remainder of the sequence; and
- receiving and reading said remainder of the sequence at the reader.

2. A method as claimed in claim 1 wherein upon receipt and reading of said remainder of the sequence, the reader is caused to transmit a second command to cause said one transponder to switch to a sleep mode wherein said one transponder no longer transmits any part of the sequence and to unmute the muted transponders.

3. A method as claimed in claim 1 wherein a reading cycle is started by the reader prompting the transponders to transmit respective discrete first parts only of respective digital sequences.
- 5 4. A method as claimed in claim 3 wherein the reader broadcasts a start signal to prompt the transponders.
- 10 5. A method as claimed in claim 4 wherein each transponder transmits the respective first parts of the respective digital sequences after respective hold-off periods after the start signal.
6. A method as claimed in claim 5 wherein the respective hold-off periods are randomly generated periods.
- 15 7. A method as claimed in claim 1 wherein the mute signal is transmitted while said one of said first parts is still being transmitted.
8. A method as claimed in claim 1 wherein the first command is transmitted within a first time window after said one of said first parts has been transmitted.
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9. A method as claimed in claim 1 wherein the second command is transmitted within a second time window after said remainder of the sequence has been read.

5 10. An electronic radio frequency identification system comprising:

- a reader;
- a transponder population comprising a plurality of transponders to be read by the reader;
- the reader comprising a controller, a transmitter for transmitting signals to the transponder population and a receiver for receiving response digital sequences from the transponder population;
- the controller being operative to lock onto a first part of a digital sequence being transmitted by one of said transponders;
- the controller being operative to cause the transmitter to broadcast a mute signal to mute all of said transponders not yet transmitting;
- the controller further being operative to cause the transmitter to transmit a separate first command to cause said one of said transponders to transmit a remainder of the sequence; and
- the controller causing the receiver to receive and read said remainder of the sequence.

5 11. A system as claimed in claim 10 wherein the controller is operative upon the receiver having received and read said remainder to cause the transmitter to broadcast a second command to cause said one transponder to switch to a sleep mode and to unmute the muted transponders.

10 12. A system as claimed in claim 10 wherein the controller is operative to cause the transmitter to prompt the transponders to respond with respective discrete first parts only of respective response digital sequences.

15 13. A system as claimed in claim 10 wherein the transmitter transmits the mute signal while said first part of a digital sequence is being transmitted

14. A system as claimed in claim 10 wherein the first command is transmitted during a first time window after reception by the reader of said one of said first parts.

20 15. A system as claimed in claim 10 wherein the second command is broadcast during a second time window after said remainder has been read by the reader.

16. A reader for an electronic radio frequency identification system comprising:

- a controller; a transmitter for transmitting signals to a transponder population comprising a plurality of transponders; and a receiver for receiving response signals from the transponder population;
- the controller being operative to lock onto a first part of a digital sequence being transmitted by one of said transponders;
- the controller being operative to cause the transmitter to broadcast a mute signal to mute all of said transponders not yet transmitting;
- the controller further being operative to cause the transmitter to transmit a separate first command to cause said one of said transponders to transmit a remainder of the sequence; and
- the controller causing the receiver to receive and read said remainder of the sequence.

17. A transponder for an electronic radio frequency identification system, the transponder comprising:

- a modulator for modulating a carrier with response signals;
- a demodulator for demodulating command signals; and
- a controller for the modulator and demodulator;

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- the controller being sensitive to a mute command received from a reader and responsive thereto by muting the transponder, and if the mute command is not received, to cause the modulator to modulate the carrier with a first part only of a digital sequence;

- the controller further being sensitive to a separate first command signal; and

- the controller also being responsive to said first command signal by causing the modulator to modulate the carrier with a remainder of the sequence.

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